

Section II. Socioeconomic Characterization

This section provides information about the communities, institutions and major economic and demographic trends affecting both the project area and the region. Such socio-economic information is critical to proper planning and implementation of conservation and restoration efforts whether at the landscape or site specific scale. Regulatory responsibility is spread among governmental agencies, at multiple levels, and regulations may vary among jurisdictions, so it is important to know where particular responsibilities lie, particularly in regard to laws that govern what happens in the coastal area. Economic information is helpful in assessing where resources are consumed, income and employment are generated and the general level of economic prosperity, which can be an important indicator of public demand and conservation and restoration funding availability. Land use and development trends tell us where development is occurring, at what rate, and suggest factors which may influence those development trends. This is all information that can help in planning a successful conservation and/or restoration project in the coastal Lake St. Clair region.



Figure II. A. - 1
Project and watershed overview

II. A. Political Jurisdictions and Institutions

The project area includes the two federal governments of Canada and the United States, Walpole Island First Nation, the Province of Ontario, the State of Michigan and hundreds of cities, towns, villages and unincorporated areas.

FACT

The project area includes the two federal governments of Canada and the United States, Walpole Island First Nation, the Province of Ontario, the State of Michigan and hundreds of cities, towns, villages and unincorporated areas.

Figure II. A. - 1 provides an overview of the watersheds and some of the political jurisdictions within the project area and larger Lake St. Clair watershed.

II. A. 1. United States/Michigan

In the United States, responsibilities for protection of water resources, public health, and the environment are complex and responsibility is often shared among federal, state and local agencies. The following section describes the primary agencies and their roles and responsibilities in public health, environmental protection and natural resource management.

U.S. Federal Government

The U.S. Environmental Protection Agency (EPA) is the primary environmental regulatory body in the United States. Its mission is to protect public health and to safeguard and improve the natural environment. It does this by ensuring that federal environmental laws are implemented and enforced fairly and effectively and that the public has full access to information in order to participate in environmental protection. The National Environmental Policy Act of 1969 (NEPA) is the basic U.S. charter for the protection of the environment. It establishes policy, sets goals and provides the means for carrying out policy. The passage of the Federal Water Pollution Control Act of 1972, began a concerted effort to address sources (mainly point sources) of water pollution, a major stressor of the aquatic environment and associated habitat. The 1977 Federal Clean Water Act Amendments to the Water Pollution Control Act, which followed, began regulating destruction of wetland habitat. Other federal statutes enable the U.S. EPA to regulate specific aspects of the environment including the Clean Water Act (CWA), Comprehensive Environmental Response, Compensation and Liability Act, Resource Conservation and Recovery Act, Clean Air Act and others.

The U.S. Army Corps of Engineers (Corps) provides engineering services including planning, designing, building and operating water resources and other civil works projects. The Corps supports commercial navigation by maintaining and improving navigation channels through dredging, removing impediments and widening and deepening channels. The Corps has authority under both the federal River and Harbors Act of 1899 and the Clean Water Act to determine which areas qualify for protection as wetlands. The Corps also provides a variety of other public services, such as restoration initiatives and flood damage reduction.

FACT

The U.S. Fish and Wildlife Service (FWS) works to conserve, protect and enhance fish, wildlife, plants and their habitats. The Service's major areas of responsibility involve migratory birds, endangered species, certain marine mammals and freshwater and anadromous fish.

The U.S. Department of Agriculture's (USDA) primary role is to oversee the production of agriculture, but it is also a leading conservation agency. Through its Natural Resources Conservation Service (NRCS), the USDA supports voluntary efforts to protect natural resources on private property through programs such as the Wetlands Reserve Program, Watershed Protection and Flood Prevention Operations, Conservation Technical Assistance, and many others.

The U.S. Fish and Wildlife Service (FWS) works to conserve, protect and enhance fish, wildlife, plants and their habitats. The Service's major areas of responsibility involve migratory birds, endangered species, certain marine mammals and freshwater and anadromous

fish. Through its Coastal Program, the U.S. FWS focuses its efforts in bays, estuaries and watersheds around the U.S. coastline. Working with other federal and state agencies, local and tribal governments, businesses, conservation organizations and private landowners, the FWS Coastal Program aims to: 1) maintain natural coastal ecosystem diversity, functions and productivity, 2) promote natural, self-sustaining populations of native species within their historic ranges, and 3) provide for ecologically sound levels of public use, economic benefits, and the enjoyment of natural resources.

The U.S. Geological Survey (USGS) serves as an independent fact-finding agency that collects, monitors, analyzes and provides scientific data about natural resources. The USGS has no regulatory or management mandate. Through its National Water Quality Assessment (NAWQA) Program, the USGS is conducting water quality investigations throughout the United States. The Lake Erie-Lake St. Clair basin is one of the NAWQA study areas. An assessment was conducted between 1996 and 1998 and findings were published in 2000 in the report *Water Quality in the Lake Erie-Lake St. Clair Drainage*.¹

The National Oceanic and Atmospheric Administration (NOAA), housed within the U.S. Department of Commerce, conducts research and gathers data about the global oceans, atmosphere, space and sun, and applies this knowledge to science and service. The National Ocean Service (NOS) is the main part of the NOAA concerned with coastal issues and administers the national Coastal Zone Management Program. NOS collects, monitors, analyzes, and provides scientific understanding about coastal resource conditions, issues, and problems with a focus on four primary goals: promote safe navigation; sustain coastal habitat; support coastal communities; and mitigate coastal hazards. Some of this work is carried out by the NOAA Coastal Services Center.

Table II A 1 - 1 Selected U.S. Federal Agencies and laws that affect coastal land protection and development

Federal Agency	Federal Law
U.S. Environmental Protection Agency and Great Lakes National Program Office	National Environmental Policy Act; Clean Air Act; Clean Water Act; Safe Drinking Water Act; Resource Conservation And Recovery Act; Great Lakes Water Quality Agreement*
U.S. Fish and Wildlife Service	Endangered Species Act; Great Lakes Fish and Wildlife Restoration Act
National Oceanic and Atmospheric Administration (U.S. Department of Commerce)	Coastal Zone Management Act
Natural Resource Conservation Service (U.S. Department of Agriculture)	Great Lakes Basin Program, Farm Security and Rural Investment Act of 2002 (Farm Bill)
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act; dredging and filling of navigable waterways (including wetlands)

*Binational Executive Agreement

State of Michigan

The Michigan Department of Environmental Quality (MDEQ) is the primary state environmental regulatory agency in Michigan. It exercises delegated federal authority and direct state authority, under the Michigan Natural Resources and Environmental Protection Act (NREPA) and a variety of other state environmental and natural resource laws and associated programs. Under NREPA, Michigan’s natural resources lakes and streams, floodplains, adjacent uplands, as well as farmland and open space are regulated and protected.

FACT
The Michigan Department of Environmental Quality (MDEQ) is the primary state environmental regulatory agency in Michigan.

Through its water programs, MDEQ establishes water quality standards, assesses water quality, provides regulatory oversight for all public water supplies, issues permits to regulate the discharge of industrial and municipal waste waters, and monitors

state water resources for water quality, the quantity and quality of aquatic habitat, the health of aquatic communities, and compliance with state and federally delegated laws. The MDEQ shares responsibility for wetlands protection with the U.S. Army Corps of Engineers. MDEQ also administers the state Coastal Management Program (See case study on page 34).

The Michigan Department of Natural Resources (MDNR) is committed to the conservation, protection, management, use and enjoyment of the State’s natural resources for current and future generations. The MDNR is responsible for management and regulation of Michigan’s public trust resources, including fish and wildlife.

The Michigan Department of Community Health (MDCH) is responsible for health policy and management of the state's publicly funded health service systems. MDCH provides an annual Michigan Fish Advisory online, which described which fish pose a risk to human health based upon consumption frequency, location of catch and fish species at www.michigan.gov/documents/FishAdvisory03_67354_7.pdf. MDCH works in conjunction with MDEQ to oversee beach water quality monitoring and develop standards for waters used for swimming.

U.S. Local Government

Decisions made at the local level critically impact the quality of the St. Clair River and Lake St. Clair. On the U.S. side, all or parts of 153 county, township and municipal governments are located within the Lake St. Clair watershed. These local governments are responsible for almost all land use decisions within their jurisdictions, including the location of

residential, commercial, and industrial development, road improvements and the planning and construction of water and sewer lines.

HIGHLIGHT

Local municipalities have direct responsibility to implement water quality requirements in the areas of stormwater management, soil erosion control, flood control and in operating municipal drinking water and wastewater treatment systems.

In addition, numerous special purpose jurisdictions, such as local school districts, water and sewer authorities, and waste disposal authorities, also possess autonomous authority to make land use decisions. Zoning and planning laws and laws that grant powers to special purpose jurisdictions generally do not impose specific environmental requirements on these local entities, although federal and/or state environmental permitting requirements apply to particular projects.

Local municipalities have direct responsibility to implement water quality requirements in the areas of stormwater management, soil erosion control, flood control and in operating municipal drinking water and wastewater treatment systems.

Local governments may also engage in voluntary collaborative efforts. For example, the Macomb-St. Clair Inter-County Watershed Management Advisory Group has sponsored the Anchor Bay Watershed Management Initiative, a cooperative effort to develop a watershed management plan for the Anchor Bay sub-watershed.

HIGHLIGHT

In Canada, a combination of federal and provincial laws and policies together with controls exercised by local authorities provide protection of water resources, public health and the environment. The division of responsibilities for water and other environmental issues is complex and responsibility is often shared.

II. A. 2. Canada/Ontario

In Canada, a combination of federal and provincial laws and policies together with controls exercised by local authorities provide protection of water resources, public health and the environment. The division of responsibilities for water and other environmental issues is complex and responsibility is often shared².

By virtue of the Constitution Act, provinces own water resources and have the authority to legislate areas of water supply and pollution control. Water on federal lands and on the reserves of Canada's aboriginal peoples falls under federal jurisdiction. The National Parliament has specific responsibility for fisheries as well as navigation, international undertakings and na-

tive affairs. Thus, there are interactions among several different areas of Canadian jurisdiction when dealing with international boundary waters such as Lake St. Clair³. Similar to the U.S., the administration of air and waste regulations involves both federal and provincial responsibilities.

Canadian Federal Government

Canada is a signatory to several treaties and agreements with the United States dealing with waters that flow along or across the common boundary. The federal government has a fiduciary responsibility to the First Nations within the Lake St. Clair watershed⁴. These include Walpole Island First Nation (Bkwejwanong), Chippewas of Aamjiwnaang (Sarnia), Delaware Nation (Moravian of the Thames), Caldwell First Nation, Chippewas of the Thames, Oneida of the Thames, and Munsee Delaware Nation.

Environment Canada (EC) has a mandate under the Department of the Environment Act to preserve and enhance the natural environment, carry out objectives of the Great Lakes Water Quality Agreement (GLWQA), and coordinate federal environmental policies. The Canada Water Act provides for management of the water resources of Canada in cooperation with the provincial governments⁵.

Under the Canadian Environmental Protection Act (CEPA), Environment Canada and Health Canada share the task of managing risks associated with toxic substances and filling gaps for environmental protection when there is no coverage under other federal acts.

HIGHLIGHT

The Species at Risk Act (SARA) received Royal Assent in December 2002 and came into force in 2003. Under SARA, there is increased protection for endangered species and other species at risk.

The Canadian Wildlife Service (CWS) is a branch of Environment Canada that handles federal wildlife issues, such as those arising from the Migratory Bird Convention Act that implements the 1916 treaty between Canada and the United States. The Canada Wildlife Act gives the federal government the authority to acquire habitat for migratory birds. Within the project area, the CWS owns and manages the St. Clair Wildlife Refuge. The Species at Risk Act (SARA) received Royal Assent in December 2002 and came into force in 2003. Under SARA, there is increased protection for endangered

species and other species at risk. Environment Canada and the Department of Fisheries and Oceans Canada (DFO) share responsibility for implementing SARA, with DFO being responsible for aquatic species and habitat⁶.

Fisheries and Oceans Canada has legislative responsibility for administration and enforcement of the Fisheries Act. A Memorandum of Understanding between DFO and EC outlines the responsibilities of both departments. DFO manages the protection of fish habitat under Section 35 of the Fisheries Act that controls work done in or near water that could result in the alteration, disruption or destruction of fish habitat. Projects can range in size and complexity from the installation of a culvert for a road crossing to the development of a large mine. The DFO has developed working arrangements with many Ontario Conservation Authorities to undertake review of project proposals. Depending on the significance of the project, an environmental assessment under the Canadian Environmental Assessment Act (CEAA) may be required. The Canadian Environmental Assessment Agency, which administers the CEAA, and DFO conduct and coordinate the assessment review concurrent with the review process for authorization under the Fisheries Act⁷.

Agriculture is a shared responsibility of the federal and provincial governments. In June 2002, Agriculture and Agri-Food Canada, in cooperation with the provinces, announced a framework for agriculture in Canada. One goal of the Agricultural Policy Framework (APF) is to minimize agricultural impacts on water, with special attention paid to the effects of nutrients, pathogens, and pesticides on aquatic ecosystems. These goals will be accomplished through federal-provincial negotiations that will set environmental targets and through federal-provincial programs that will address on-farm land use, nutrients, pesticides, and other substances⁸.

Province of Ontario

The government of Ontario shares responsibility with the government of Canada to protect the environment and public health. In 1971, both governments signed the first Canada-Ontario Agreement Respecting the Great Lakes Basin

FACT

As part of the Ontario government's Clean Water Strategy, the Nutrient Management Act provides for province-wide standards to address the effects of agricultural practices on the environment such as the application of manure to land.

es of provincial legislation are the Ontario Water Resources Act, the Environmental Protection Act, the Environmental Assessment Act, the Environmental Bill of Rights, and the Pesticides Act. These acts provide general prohibitions or control over activities such as use of water resources, waste management, discharges to land, water and air or the use of pesticides¹⁰.

The Ontario Ministry of Agriculture and Food is involved with research and extension activities to support Ontario's agri-food industry. Ontario enacted the Nutrient Management Act in July 2002 that will protect water from agricultural nutrients. This act aims to set clear, consistent standards for nutrient management on farms and protect the environment. As part of the Ontario government's Clean Water Strategy, the Nutrient Management Act provides for province-wide standards to address the effects of agricultural practices on the environment such as the application of manure to land¹¹.

A number of acts and regulations govern the activities of resource users and are administered by the Ontario Ministry of Natural Resources (e.g., Lakes and Rivers Improvement Act, Public Lands Act). The Ontario Endangered Species

HIGHLIGHT

The Ontario Endangered Species Act provides for the protection of endangered species and their habitat. This act, together with the Federal Species at Risk Act, forms the network in Ontario for protecting species at risk.

Ecosystem. The Ontario Ministry of the Environment (OMOE) and EC are the lead agencies for the agreement. In 2002, Canada and Ontario signed an updated agreement with several annexes that address specific environmental issues in detail and set specific commitments by each government. The current annexes include Areas of Concern, Harmful Pollutants, Lakewide Management Plans and Monitoring and Information Management. New annexes can be added at any time to address emerging issues⁹.

The OMOE has primary responsibility for pollution control for the provincial government. The major piec-

Act provides for the protection of endangered species and their habitat. This act, together with the Federal Species at Risk Act, forms the network in Ontario for protecting species at risk¹².

The Ministry of Municipal Affairs and Housing (MMAH) manages four major areas: local government, land use planning, housing market and building regulation. Many of the actions and efforts of this ministry have direct or indirect impacts on the environment. For example, the 2001 Brownfields Statute Law Amendment Act gives MMAH authority to help remove obstacles to cleaning up former industrial sites.

The Ministry also oversees implementation of the Planning Act, which delegated land use planning authority to municipal governments. The Provincial Policy Statement of the Planning Act provides policy direction to municipalities on matters of provincial interest regarding land use planning. This includes land use in and adjacent to natural features such as wetlands (See Section II. D. 1. for a description of Canadian planning policies).

Canadian Local Government

In Canada, municipalities are created only by the province. The Municipal Act sets the terms by which the provinces establish such local governments. In the more heavily populated southern part of the province, two-tiered regional governments were established in the 1970s to assist municipalities with planning for development, with the "upper

tier” being the county or region and the “lower tier” being the city, township or village. Under the two-tier system of local governance, functions are divided between the two levels. Exact responsibilities vary from place to place, but generally the upper tier--regional government--takes on functions such as regional planning, sewer and water infrastruc-

FACT

In Ontario, parts of nine counties and over thirty local municipal governments are located in the Lake St. Clair watershed. There are also seven First Nation reserves located in the watershed.

ture planning, major roads, transit, policing and some social services. The local governments deal with local planning, parks, garbage collection, etc. There is often duplication between the two levels--with respect to economic development initiatives, for instance. Where there is only one level of municipal government in an area it is called a “single tier” municipality¹³.

In Ontario, parts of nine counties and over thirty local municipal governments are located in the Lake St. Clair watershed. There are also seven First Nation re-

serves located in the watershed. Seven Ontario municipalities share the Lake St. Clair and St. Clair River shoreline. In Lambton County, the Village of Point Edward, the City of Sarnia, and the Township of St. Clair (formerly Sombra and Moore Townships) stretch along the St. Clair River from Lake Huron to the beginning of the Chenal Ecarte. Walpole Island First Nation is located on the St. Clair Delta. The Corporation of the Municipality of Chatham-Kent, which was formed by combining 23 local municipalities, reaches from the beginning of the Chenal Ecarte to the mouth of the Thames River at the southeastern corner of Lake St. Clair. The County of Essex has undergone a major restructuring which reduced the County from twenty-one local municipalities to seven. The new seven municipalities in Essex County are as follows: Amherstburg, Essex, Kingsville, Lakeshore, LaSalle, Leamington and Tecumseh.¹⁴

Conservation Authorities

The Province of Ontario enacted the Conservation Authorities Act in 1946. This allowed municipalities to establish local Conservation Authorities that could provide comprehensive watershed planning and management activities. The Conservation Authorities Act was based on the premises that the logical way to coordinate conservation work was on a watershed basis and that the initiative must come from the local people. Created through a partnership of municipalities – at least two-thirds of the municipalities in a watershed had to agree to form an authority – and governed by a municipally-appointed Board of Directors, these authorities can address conservation issues across municipal boundaries¹⁵.

HIGHLIGHT

Four watershed-based Conservation Authorities have jurisdiction within the Lake St. Clair watershed.

Four watershed-based Conservation Authorities have jurisdiction within the Lake St. Clair watershed. The St. Clair Region Conservation Authority has jurisdiction over all watersheds of streams that drain into the St. Clair River, the Sydenham River and Lake St. Clair north of the mouth of the Thames River. The Thames River is divided into two jurisdictions: Lower and Upper. The Lower Thames Valley Conservation Authority has responsibility for watersheds of all streams that

drain into the Thames River from the Village of Delaware to Lake St. Clair. The Upper Thames River Conservation Authority has responsibility for all the watersheds of streams that drain into the Thames River above the Village of Delaware. The Essex Region Conservation Authority has jurisdiction over the watersheds of streams in Essex County draining directly into Lake St. Clair¹⁶.

II. A. 3. Walpole Island First Nation

Walpole Island is part of the traditional homeland of the Potawatomi, Ottawa and Ojibwa people, who together comprise a political compact known as the Three Fires Confederacy. Walpole Island has been administered as “Reserve”

FACT

The Walpole Island First Nation continues to assert and exercise Aboriginal title to its territory, unceded lands and waters. Walpole Island was the first “Reserve” in Canada to function outside of the Indian Agent system when Chief and Council removed the agent in 1965.

First Nation self-government movement. Walpole Island is a part of the federal Electoral Riding of Kent Lambton Middlesex and Ontario Electoral Riding of Lambton¹⁷.

Walpole Island First Nation is in large part comprised of six islands in the St. Clair River Delta on the south and east side of the international border delineated by the St. Clair River and South Channel of the St. Clair River, including: Walpole, Squirrel, St. Anne, Seaway, Bassett, and Potawatomi, which collectively have 87 miles of shoreline¹⁸. In total and “Without Prejudice to Pending & Future Land Claims” Walpole Island First Nation is approximately 58,000 acres

FACT

Nearly all of the households on Walpole Island are directly or indirectly involved with hunting, fishing and trapping activities. Recreational tourism is the number one industry.

land for over 150 years. The Ottawa and Ojibwa were original occupants of what is now known as southwestern Ontario, while the Potawatomi settled permanently on Walpole Island after 1836.

Walpole Island was not included in any of the 18th and 19th century land surrenders and treaties and the Walpole Island Reserve boundary has never been clearly established. The Walpole Island First Nation continues to assert and exercise Aboriginal title to its territory, unceded lands and waters. Walpole Island was the first “Reserve” in Canada to function outside of the Indian Agent system when Chief and Council removed the agent in 1965. This event significantly advanced the

(23,472 hectares) in size. Of this, approximately 43 percent is classified as prime agricultural land (Class 1,2 and 3 Soils by Canada Land Inventory) and 30 percent is wetlands.

Nearly all of the households on Walpole Island are directly or indirectly involved with hunting, fishing and trapping activities. Recreational tourism is the number one industry. The second largest industry is agriculture. In 1971, Tahgahoning Enterprise was established with 200 acres. Today, Tahgahoning Inc. operates a 4,400

acre cash crop farm and dryer/storage facility. The third ranking and fastest growing sector is government services. The remainder of the population is involved in manufacturing, trade industries, transportation, communications and other utility industries and miscellaneous commercial activities. Local facilities include an economic development and industrial-training complex and the Thunderbird Mall.

II. B. Population Growth/Migration

The following discussion of population growth and migration is separated between the U.S. and Canada, due primarily to different data sources and collection time frames in each country, which made combining the population trends unfeasible.

U.S. Regional Summary 1990 to 2000

Between 1990 and 2000, the seven county region of Southeast Michigan grew by more than 230,000 to 4.83 million total population, an increase of 5.1 percent¹⁹. This includes the cities, villages, townships, and counties, within the seven county area of Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties. During this time, the region’s households (number of houses) grew at a faster rate than population. In 1990, there were 1.69 million households which grew to 1.87 million households in 2000—a 10.4 percent increase. Households growing faster than

FACT

Between 1990 and 2000, housing increases outpaced the population growth by a factor of two to one. Households have fewer members, but more houses occupy more land - human impacts on the destruction and fragmentation of habitat are accelerating.

population can be explained by the changing composition of households over time. While households with children have remained relatively stable over time, there has been a significant increase in the number of households without children, as the children of baby boomers have grown up and moved from home leaving their parents as empty nesters. The overall result has been a steady decline in the average household size, from 2.66 in 1990 to 2.53 in 2000⁶.

Between 1990 and 2000 the three coastal counties in the study area that border Lake St. Clair (St. Clair, Macomb, Wayne) experienced an average 13.1 percent increase in number of households compared with a 6.1

percent increase in population. Consistent with regional and statewide trends, the increase in households far outpaced population increase.

Averaging out changes in the three coastal counties can sometimes obscure unique changes or circumstances. Only a small portion of the study area lies within Wayne county, which is the home of Detroit. Demographic changes in Wayne county were very different from those in Macomb and St. Clair. Table II B - 1 shows population and household changes for the three counties between 1990 and 2000²⁰.

Table II B - 1 Population and Household Changes 1990-2000

County	Total Population				Households			
			Change: 1990-2000				Change: 1990-2000	
	1990	2000	Number	%	1990	2000	Number	%
Macomb	717,400	788,149	70,749	9.9	264,991	309,203	44,212	16.7
St. Clair	145,607	164,234	18,627	12.8	52,882	62,072	9,190	17.4
Wayne	2,111,687	2,035,536	-76,151	-3.6	780,535	788,873	8,338	1.1
Southeast Michigan	4,590,468	4,833,492	243,024	5.3	1,698,819	1,845,313	146,494	8.6

Wayne county experienced only a slight increase in households between 1990 and 2000 (1.1 percent) while losing more than 76,000 residents—a 3.6 percent population decrease. In contrast, St. Clair and Macomb counties added 58,208 households (a 19.1 percent increase) and experienced an 11 percent increase in population during the decade.

St. Clair and Macomb counties alone absorbed 36 percent of both total population increase and total increase in households in southeast Michigan from 1990 to 2000. In the year 2000 these two counties had 19 percent of the total population and 20 percent of the total households in southeast Michigan, compared to 18 percent of the population in 1990 and 18 percent of households in 1990. By the year 2000, 30 percent of the state’s population (3,013,546) were living in one of the three counties bordering Lake St. Clair.

Within the three coastal counties along Lake St. Clair, population trends in communities within the 10 mile project area compared to the rest of the county, are about the same. Any community with at least 50 percent of its total area within the ten mile project area study area along the coast, was included as defined as being within the project area. In the period 1990 to 2000 population and numbers of households both increased in Macomb and St. Clair counties as

a whole, but those areas within the project area were about the same or even slightly less than the rest of the county. (See Table II B- 2.)

Table II B - 2 1990-2000 Population and Household Estimates for Coastal Communities within Project Zone

	Total Population		Pop Change '90-'00		Total Households		HH Change '90-'00	
	April 1990	April 2000	number	percent	April 1990	April 2000	number	percent
Macomb Co. Project Area	636,545	681,626	45,081	7.1	237,289	269,877	32,588	13.7
St. Clair Co. Project Area	26,853	29,962	3,109	11.6	9,798	11,500	1,702	17.4
Wayne Co. Project Area	1,150,616	1,071,909	-78,707	-6.8	422,498	382,793	-39,705	-9.4
Macomb Co. Project as %Total	88.7%	86.5%			89.5%	87.3%		
St. Clair Co. Project as %Total	18.4%	18.2%			18.5%	18.5%		
Wayne Co. Project as %Total	54.5%	52.0%			54.1%	49.8%		

For example, in 1990, 88.7 percent of the total population in Macomb county lived within the project area. The population of the project area had increased by the year 2000, but in that year it represented 86.5 per cent of the total county population. St. Clair county was about the same²¹.

U.S. Regional Summary 2000 to 2004

As shown in Table II B - 3 all counties in Southeast Michigan, except for Wayne County, experienced population and household growth since the last (2000) census²². Similar to the past decade, population and numbers of households both increased in Macomb and St. Clair counties from 2000 to 2004. In the context of the southeast Michigan region, 61 percent of the population increase and 44 percent of the increase in households during this time occurred in Macomb and St. Clair counties alone²³. Of the two, Macomb experienced the greatest gain with 33,000 more persons and 16,000 more households.

FACT

All counties in Southeast Michigan, except for Wayne County, experienced population and household growth since the last (2000) census.

As a percentage of the total, population and household growth within the ten-mile coastal project area of Macomb and St. Clair counties were about the same or less than in their respective counties overall (See Table II B - 3). Over 86 per cent of the total population in Macomb County is within the 10 mile shoreline project area of Lake St. Clair.

Table II B - 3 2000-2004 Population and Household Est. Communities within Buffer Zone

	Total Population		Pop Change 00 - 5/04		Total Households		HH Change 00 - 5/04	
	April 2000	Est. May 2004	number	percent	April 2000	Est. May 2004	number	percent
Southeast Michigan	4,833,368	4,896,751	63,383	1.3	1,845,218	1,898,890	53,672	2.9
Macomb County	788,149	821,031	32,882	4.2	309,203	329,409	20,206	6.5
St. Clair County	164,235	170,362	6,127	3.7	62,072	65,534	3,462	5.6
Wayne County	2,061,162	2,021,198	-39,964	-1.9	768,440	760,744	-7,696	-1.0

Macomb Co. Buffer Area	681,626	706,956	25,330	4.0	269,876	286,216	16340	6.0
St. Clair Co. Buffer Area	29,963	30,089	126	0.0	11,501	11,755	254	2.0
Wayne Co. Buffer Area	1,071,989	1,026,480	-45,509	-4.0	382,833	365,871	-16962	-4.0
Macomb Co. Buffer as %Total	86.5%	86.1%			87.3%	86.9%		
St. Clair Co. Buffer as %Total	18.2%	17.7%			18.5%	17.9%		
Wayne Co. Buffer as %Total	52.0%	50.8%			49.8%	48.1%		

Many communities are growing faster than the regional household and population average of one percent and 0.7 percent, respectively. Macomb Township and New Baltimore are noteworthy in that household and population increases have been faster than average since the last census.

FACT
 In absolute terms, Macomb Township exceeds all other Southeast Michigan communities in both population and household gain.

In absolute terms, Macomb Township exceeds all other Southeast Michigan communities in both population and household gain. With an increase of 14,000 persons and 5,000 households since the 2000 Census, Macomb Township accounts for 16 percent of population growth in Southeast Michigan and 10 percent of the region’s additional households and now ranks as the 19th most populous community in the region. Other communities with population growth averaging more

than 1,000 persons per year since 2000 within the three coastal counties along Lake St. Clair include Chesterfield and Shelby Township. In percentage terms, the communities of New Baltimore and New Haven have increased their population by more than 30 percent since 2000.

In sum, the coastal project area in both Macomb County and St. Clair County are growing at about the same rate as the counties, respectively, and even the larger region. This growth, particularly with increasing households, represents

HIGHLIGHT
 Conservation and restoration of coastal habitat is imperative to maintain ecological functions and ensure the quality of life that is derived from living in or near a coastal area.

continued demands to convert what remaining habitat does exist to accommodate new households and associated commercial and other development, both within and beyond the coastal project area. Similarly, population growth further away from the shore does not mean that pressure on the Lake will be reduced. Indeed, the additional people can be expected to travel further to enjoy the Lake’s many amenities. Anywhere within a couple hours of driving is considered reasonable to spend a day at or on the lake. Amidst these trends, conservation and restoration of coastal habitat

is imperative to maintain ecological functions and ensure the quality of life that is derived from living in or near a coastal area. More discussion about the role of population growth on land use trends and impacts is included in Section II. D. 2.

U.S. Future Projections to 2030

The seven county area of Southeast Michigan is projected to experience a 12 percent population increase between 2000 and 2030, reaching a total of 5.4 million people. The region’s growth rate has been similar to the overall growth rate for the state of Michigan, which is about half the rate of the entire United States. “Domestic migration,” or population movement within the United States, has resulted in a net loss of total population for the southeast Michigan area. It is

caused primarily by young people seeking opportunities for better quality of life elsewhere outside of the seven county area of SEMCOG²⁴.

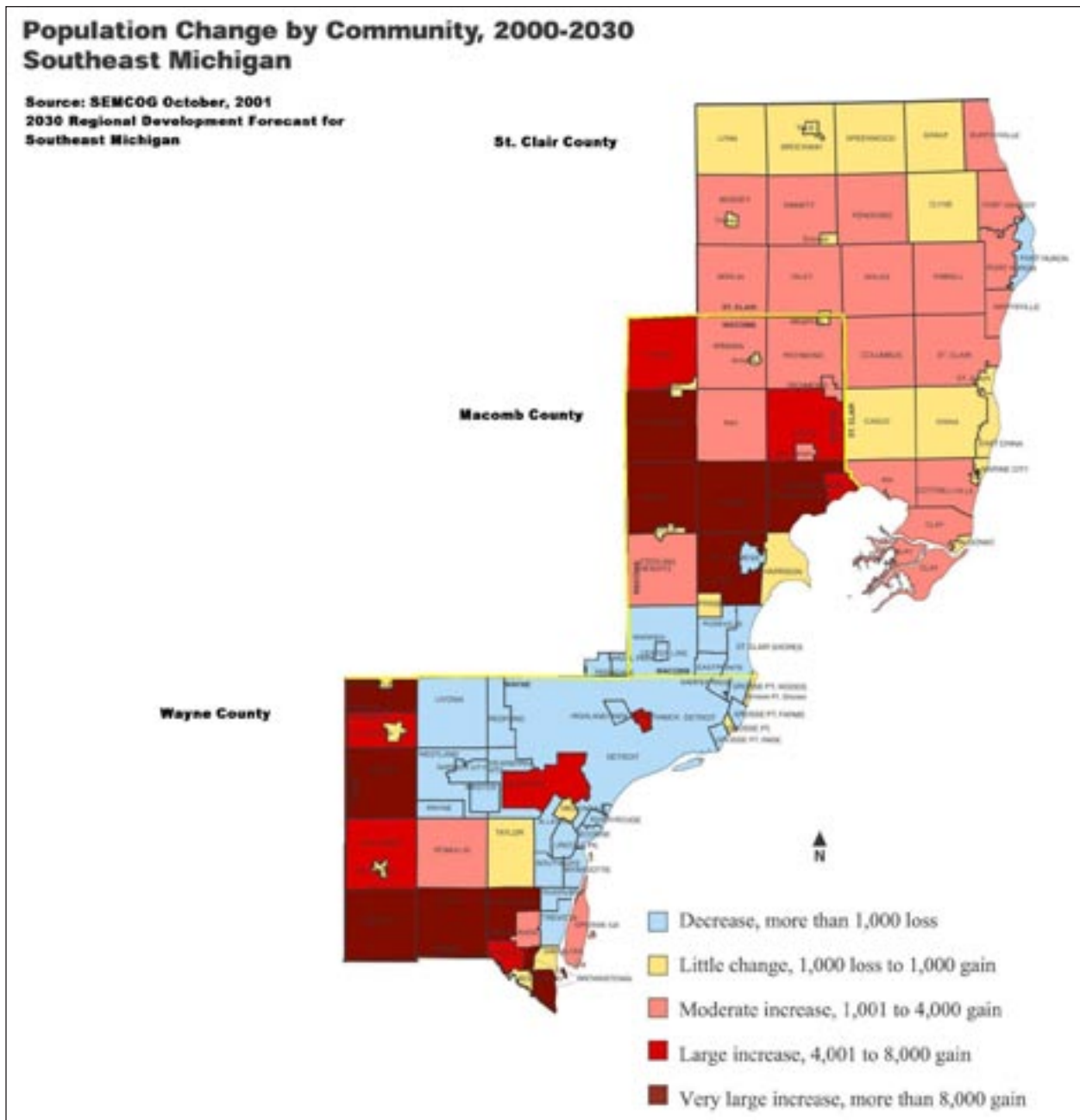


Figure II B - 1

Figure II B - 1 shows population change by community between 2000 and 2030 in the three U.S. counties bordering Lake St. Clair. The pattern of population change is generally one of growth outside Detroit and its mature suburbs. Southern and western Wayne County and central Macomb County are among the areas projected to be the fastest growing. The City of Detroit's historically high rates of population and household loss have slowed considerably and this decline is expected to continue.

Table II B - 4 summarizes the expected population growth per county in the seven county region of SEMCOG from 1990 to 2030. From 1990 to 2030, the population of Macomb and St. Clair Counties is expected to increase by a total of 266,892. This is 33 percent of the total estimated regional population growth of 810,820.

Table II B - 4 2030 Regional Development Forecast for Southeast Michigan

County	1990	2000	2005	2010	2015	2020	2025	2030	Pop Change	
									number	percent
Livingston	115,645	156,951	179,733	196,950	216,914	239,059	260,038	282,405	166,760	144.20%
Macomb	717,400	788,149	811,251	830,143	851,415	876,371	903,489	926,347	208,947	29.10%
Monroe	133,600	145,945	156,533	167,375	175,108	182,345	186,695	191,500	57,900	43.30%
Oakland	1,083,592	1,194,156	1,229,625	1,258,206	1,288,922	1,309,461	1,330,428	1,346,185	262,593	24.20%
St. Clair	145,607	164,235	171,312	176,795	185,608	192,626	198,375	203,552	57,945	39.80%
Washtenaw	282,934	322,895	342,163	365,603	384,075	401,076	418,269	433,205	150,271	53.10%
Wayne	2,111,687	2,061,162	2,046,588	2,038,012	2,027,915	2,015,793	2,012,421	2,018,091	-93,596	-4.40%
Detroit	1,027,979	951,270	928,582	908,883	892,263	878,817	869,462	865,167	-162,812	-15.80%
Balance Wayne	1,083,708	1,109,892	1,118,006	1,129,129	1,135,652	1,136,976	1,142,959	1,152,924	69,216	6.40%
Region	4,590,465	4,833,493	4,937,205	5,033,085	5,129,958	5,216,731	5,309,715	5,401,285	810,820	17.70%

Table II B - 4 summarizes the expected population growth per county in the seven county region of SEMCOG from 1990 to 2030. From 1990 to 2030, the population of Macomb and St. Clair Counties is expected to increase by a total of 266,892. This is 33 percent of the total estimated regional population growth of 810,820.

The Integrated Coastal Management Tool (described in Section VII) developed as part of the Lake St. Clair Coastal Habitat Project has been designed to use the SEMCOG-generated population data when performing analyses to identify and rank potential conservation areas or assist with other land use planning decisions.

Canadian Regional Summary 1996-2001

On the Canadian side of Lake St. Clair, the three counties of Essex, Chatham-Kent and Lambton border Lake St. Clair. Of these three, Essex has the largest population and includes the city of Windsor and the Windsor Census Metropolitan Area (CMA) which includes Tecumseh, La Salle and parts of Lakeshore, Essex and Amherstburg. Essex county borders

FACT
 Three Canadian counties border Lake St. Clair: Essex County borders the southern shore, Kent County lies along the eastern shore and Lambton County is adjacent for only a short distance on the northeast shore of the lake.

the southern shore of Lake St. Clair, while Kent County borders the eastern shore and Lambton county is only adjacent for a short distance on the northeast shoreline of the lake. In 2001 the population of Chatham-Kent was 112,800 persons. Since the recession of the early 1990's the municipality of Chatham-Kent has experienced no growth and more recently (between 1996 and 2001) negative growth. A population decline in the past five years has taken place in agricultural/rural areas while overall the population in the urban centers has remained stable. The largest municipality in the county is Chatham with a 2001 population of 43,409. There are only 6 other municipalities (urban centers)

in the county with a population over 1000. In 2001 the share of Chatham-Kent's population in the urban centers was 66 percent - up from 64 percent in 1986. Chatham, Blenheim and Tilbury have experienced positive growth while Dresden has been stable and Wallaceburg and Ridgetown have experienced population declines.²⁵

Table II B - 5 summarizes the population growth for the area from the Canadian census from 1996 to 2001. The Canadian national census is conducted every five years. Essex County has about three times the population of the other two individual counties, with a population growth of seven percent while the other two declined in population. The

City of Windsor and the Windsor CMA are in the northern section of Essex County and fall within the ten mile coastal project area of Lake St. Clair.

Table II B - 5 Pop Growth in Canadian Counties on Lake St. Clair: 1996 to 2001


Community	Pop 1996	Pop 2001	% change '96 - '01	Pop Density per sq kilometre
Essex County Ont.	350,329	374,975	7	202.5
Lambton County Ont.	128,975	126,971	-1.6	42.3
Chatham-Kent Co Ont	109,350	107,341	-1.8	43.7
Windsor CMA Ont.	286,811	307,877	7.3	301.1
Windsor City, Ont.	197,694	208,402	5.4	1,727.7
Population Totals	1,073,159	1,125,566		

Geographically Essex County is a peninsula extending off the southern tip of Ontario, between Lake St. Clair on its north, Lake Erie on its south, and the Detroit River to its west. About 60 per cent of the Canadian side of the lake is along Essex County. At its widest point from north to south, the county is only about 30 miles wide. Thus, any population growth within this county will be a maximum of 30 miles from Lake St. Clair Shore. Importantly, this area shows the highest population increase in southwest Ontario, along with the highest population density. The Windsor CMA is

now the 15th largest in Canada and grew 7.3 per cent in total population, compared to a rate of 6.1 per cent for all of Ontario²⁶.

HIGHLIGHT

The population of Southwestern Ontario will increase through the year 2028, but its percent of the total population in Ontario is expected to fall from 13.1 percent in 1999 to about 11.4 percent in 2028, due to faster growth rates in other parts of the province (especially in the Greater Toronto Area).



Canadian Regional Future Projections to 2028

The population of Southwestern Ontario will increase through the year 2028, but its percent of the total population in Ontario is expected to fall from 13.1 percent in 1999 to about 11.4 percent in 2028, due to faster growth rates in other parts of the province (especially in the Greater Toronto Area). Growth rates for the Southwestern Ontario region will vary, with the Census Divisions of Elgin and Essex projected to have growth rates close to the provincial average²⁷.

The City of Windsor Planning Department estimates that future population growth within the city itself will increase 20 percent through 2026 (See Table II B - 6). Windsor's share of the census metropolitan area's population has gradually declined since 1966 as the other metropolitan municipalities have developed.

Table II B - 6, City of Windsor, population growth estimates to 2026

2001	2006	2011	2016	2021	2026	Population Change '01-'26	
						number	percent
208,425	218,467	228,263	236,948	244,811	251,917	43,492	20

Over the next twenty years, however, Windsor's share is anticipated to stabilize as the surrounding CMA's accommodate peripheral growth, particularly in the towns of LaSalle, Tecumseh and Lakeshore.

Future population projections shown in Table II B - 7 indicate that Kent and Lambton will have modest population increases totaling two per cent for each county, while Essex will have a 19 percent total increase in the projected period. The estimated population growth through 2028 for Essex alone will be 76,900—15 times that of the other two counties combined. In the northern half of the Essex county on the Lake St. Clair shoreline, the municipalities of LaSalle, Tecumseh and Lakeshore are expected to increase population from 30 to 45 percent from 1996 to 2016²⁸. This concentrated population growth in close proximity to Lake St. Clair will more than likely place greater demands on the lake's resources, including habitat along and near the shore.

Table II B - 7 Population Projections for Canadian Lake St. Clair Coastal Counties Through 2028

County	2006	2011	2016	2021	2026	2028	Change 2006-2028	
							number	percent
Essex	402,800	421,500	439,700	457,300	473,700	479,700	76,900	19%
Kent	113,800	114,800	115,700	116,300	116,600	116,600	2,800	2%
Lambton	131,200	132,300	133,400	134,000	133,800	133,500	2,300	2%
Ontario (Total)	12,526,200	13,198,900	13,860,100	14,508,500	15,124,400	15,354,900	2,828,700	23%

Source: Ontario Ministry of Finance, July 2000

II. C. Economic Profile

Manufacturing and the support services to manufacturing and resident populations play a large part in the economies of both Southeast Michigan and Southwest Ontario.

The commercial navigation channel through Lake St. Clair carries approximately 5,000 – 6,000 commercial vessel transits each year. The Detroit/Wayne County Port Authority estimates that ports under their jurisdiction generated \$17 million (USD) in the year 2000. These activities directly employed 5,851 persons and indirectly an additional 4,405 persons. The income generated from these activities was \$551 million (USD) with business revenues in excess of \$165

FACT

Lake St. Clair provides a vital link for commercial vessels that make up to 5,000 transits across the lake each year. Despite its significance as a maritime transportation corridor, the lake's naturally shallow depths have limited the development of deep-water commercial harbors.

million (USD). Sarnia Vessel Traffic Services (VTS) provides marine communications and traffic services for Southern Lake Huron, St. Clair and Detroit River waterway and Western and Central Lake Erie through the Canadian Coast Guard, which reports over 3,000 vessels arriving at the Port of Detroit, 1,719 at Windsor and 428 at Amherstburg during the 2003 commercial season²⁹.

Lake St. Clair provides a vital link for commercial vessels that make up to 5,000 transits across the lake each year. Despite its significance as a maritime transportation corridor, the lake's naturally shallow depths have limited the development of deep-water commercial harbors. The only ports are north along the St. Clair

River at Sarnia and south along the Detroit River in Detroit, Windsor and Amherstburg. On the other hand, naturally shallow waters have provided a Mecca for small boats and the development of associated recreational facilities.

The recreational benefits of Lake St. Clair are estimated at \$200 million (USD) on the Michigan side alone. The U.S. EPA Region 5 Southeast Michigan Inland Sensitivity Atlas records 131 marinas within the study area in Michigan. The En-

HIGHLIGHT

The recreational benefits of Lake St. Clair are estimated at \$200 million (USD) on the Michigan side alone.



Environment Canada's Environmental Sensitivity Index atlas shows a total of 121 marinas within the study area in Ontario³⁰. A current study of the economic benefits of recreational boating to the Great Lakes under the John Glenn Bill of the Water Resources Development Act of 2000 is underway. This document should shed more light on the binational economic impacts of recreational boating on the Lake St. Clair region.

Southeast Michigan³¹

St. Clair County is located in the southeastern part of the lower peninsula, bordered by Lake Huron on the northeast, the St. Clair River on the east and Anchor Bay and Lake St. Clair on the south. The county is 734 square miles in size. Farms occupy about 40 percent of the land, equally divided between crops and livestock. Manufacturing activity includes auto-related products, plastics, metal forging and stamping, and non-electrical machinery.

Macomb County is the ninth smallest of Michigan's 83 counties (with 482 square miles), yet it ranks third in population. Among the county's 27 municipalities are included three of the ten largest communities in Michigan: Warren (3rd), Sterling Heights (6th) and Clinton Township (10th). Manufacturing is Macomb County's leading industry, employing roughly one-third of the workforce. Major manufacturers alone have invested over \$2 billion in the county since 1990.

Wayne County is the nation's eighth largest county and its two million residents make up almost half (46.27 percent) of the seven-county metropolitan Detroit region. Its forty-three local communities range from Detroit, the nation's seventh largest city, to small towns. It is home to the auto industry and is expanding its diversity to the point that it is

now the center of the fastest growing high tech corridor in the United States. It is also southeast Michigan's transportation link through its border to Canada and its two international airports.

FACT

Wayne County is the nation's eighth largest county and its two million residents make up almost half (46.27 percent) of the seven-county metropolitan Detroit region.



Oakland County's population grew 10.2 percent between 1990 and 2000, while the state of Michigan grew 5.1 percent. 13.4 percent of all people employed in Michigan work in Oakland County. Thirty-eight percent of the Fortune 500 companies do business in Oakland County, and it is Michigan's leading center for

international commercial activity with 565 foreign-owned firms from 25 countries. More than 59,250 businesses and government agencies are located in the county, including 1/3 of Michigan's R&D firms. There are more than 89,000 acres of park land and 450 lakes.

Lapeer County ranks as the 23rd most populous among Michigan's 83 counties with 74,768 residents. The county consists of 18 townships, 7 villages, 2 cities, encompasses 666 square miles, and is generally balanced between farms, industry, retail and residential.

Sanilac County's early existence depended greatly upon the lumber industry. As the lumbering era ended, agricultural activities took precedence and continue to be the primary land use in the county. Sanilac County is rural/agricultural, with many small cities and villages. Approximately 72 percent of the land is devoted to agricultural production. The county is the state's top dairy product producer and ranks high in output of sugar beets, corn, oats, hay, wheat, barley, soybeans, dry beans, and cattle. Manufacturing includes rubber products, metal and plastic auto parts, and conveyors. Sugar and pickles are also produced in the county.

Table II C - 1, Southeast Michigan Labor Market and Industry Employment (1997)³²

Wage and Salary Employment	Totals
Mining	1100
Construction	89000
Manufacturing	495600
Private Service	1465200
Transportation, Communication and Utilities	100700
Wholesale Trade	135500
Retail Trade	404400
Eat and Drink	141600
Other Retail	262800
Finance, Insurance and Real Estate	122200
Depository Institutions	38300
Other Finance, Insurance and Real Estate	83900
Services	702400
Business, Engineering and Management	263800
Health Services	207600
Other Services	231000
Government	296400
Federal	33000
State and Local	263400
Education	160900
Other State and Local	102500
TOTAL	2347000

Another measure of the U.S. economy is the Gross Domestic Product (GDP) by industry. Table II C - 2 shows the GDP by industry for Southeast Michigan.

Table II C - 2, Real Gross Domestic Product for Michigan (2000)³³

Category	\$ Million (USD)
Total Gross State Product	323717
Private Industries	290273
Agriculture, Forestry, Fisheries	2886
Mining	853
Construction	16239
Manufacturing	82135
Durable Goods	62368
Nondurable Goods	19767
Transportation and Utilities	20823
Transportation	8668
Communications	5024
Electric, Gas, Sanitary	7131
Wholesale Trade	24362
Retail Trade	30322
Finance, Insurance, Real Estate	48372
Services (excluding Health Services)	44518
Health Services	19461
Government	33444

Southwest Ontario³⁴

Windsor is the major employment center for the census metropolitan area, averaging more than 90 percent of the jobs over the past twenty years. The automotive sector in the Windsor-Essex region accounts for approximately 70 percent of the region's domestic product and employs over one-third of the manufacturing labor force. In addition, agricul-

FACT

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ture is an important mainstay of the resident population throughout the Ontario portion of the watershed. As shown in Table II C - 3 and Table II C - 4 below, manufacturing and the support services to manufacturing and resident populations play a large part in the economies of Southwest Ontario. For instance, 90 percent of Essex County is agricultural land and it produces 14 percent of Canada's gross domestic product in agriculture.

Over the next twenty years, Windsor will continue to provide a significant amount of new employment opportunities within the census metropolitan area. Significant employment growth is anticipated to occur in both the automotive industry and in the tourism and hospitality sector. Total employment is expected to be

close to a projected 134,553 jobs by the year 2016. 1996 employment projections identify employment land needs between 600 to 1,270 acres (243 to 514 hectares) over the 1996-2016 twenty-year planning period. Major employers within Windsor are clustered in manufacturing and commercial nodes across the city. It is anticipated that this trend will continue with additional nodes being developed to accommodate new and expanded employers particularly in the Forest Glade and Devonshire Planning Districts.³⁵

Table II C - 3, Southwest Ontario Employment Level by Industry (2000)³⁶

Wage and Salary Employment	Totals
Agriculture	30000
Resources (Forestry, Fishing, Mining, Oil, Gas)	3000
Manufacturing	162000
Construction	45000
Distributive (Transportation, Warehousing, Utilities, Wholesale Trade)	67000
Finance, Professional and Management (Finance, Insurance, Real Estate, Management)	92000
Information, Culture and Recreation (Publishing, Media, Telecommunications, Arts, Recreation)	30000
Retail Trade	87000
Personal Services (Accommodations, Food Services, Other Services)	83000
Education	48000
Health and Social Assistance	85000
Public Administration	24000
All Industries	757000

Another measure of the Canadian economy is its respective GDPs by industry. Table II C - 4 shows the GDP by industry for Province of Ontario.

Table II C - 4, Real Gross Domestic Product for the Province of Ontario by Industry (2000)³⁷

Category	\$ Million (CDN)
Goods Producing Industries	122260
Primary Industries ³⁸	7632
Utilities	10262
Construction	18485
Manufacturing	85881
Services Producing Industries	269393
Wholesale and Retail Trade	47084
Transportation and Warehousing	16035
Information and Culture (including Telecommunications)	16712
Finance, Insurance, Real Estate, Rental and Leasing	82450
Professional, Scientific and Technical Services	20085
Administrative and Other Support Services	9137
Educational Services	17430
Health Care and Social Assistance	21076
Arts, Entertainment and Recreation	3599
Accommodation and Food Services	8287
Other Services (excluding Public Administration)	8339
Public Administration	19159

II. D. Land Use

II. D. 1. Planning Framework

United States Planning Framework

Land use planning in the U.S. is remarkably decentralized. All U.S. states have their own planning and zoning laws based on federal law and have delegated responsibility for land-use controls to local governments (i.e., counties and municipalities). State planning laws authorize local governments to develop and adopt comprehensive plans and state

zoning laws enable local governments to develop zoning regulations. In Michigan, as in all of the Great Lakes states, land use planning authority is delegated to the smallest unit of government, typically a city, village or township—a practice known as “home rule.”

FACT

In Michigan, as in all of the Great Lakes states, land use planning authority is delegated to the smallest unit of government, typically a city, village or township—a practice known as “home rule.”

The distinction between plans and regulations is an important one. The comprehensive plan is concerned with the long-term use, development and conservation of land and the relationship between local objectives and overall community and regional goals. Zoning ordinances include both a map that divides a local jurisdiction into districts and a set of regulations that

determines the use of the land and the type of buildings allowed on the land in each district or zone. In other words, plans set forth goals to be achieved, whereas regulations are a means by which to reach these goals.

Theoretically, zoning is an important tool for achieving the goals set forth in planning. In the U.S., however, much - if not most - of land-use planning is not planning but zoning, which was developed as a tool to segregate different land uses. Michigan does not require zoning to be consistent with a comprehensive plan. While most communities around Lake St. Clair have comprehensive plans, zoning ordinances rather than comprehensive plans, carry the force of law and there is no legal requirement for consistency between the two in Michigan (See Section VI. C. 1 for more information on community master plans) In addition to zoning regulations, which determine what type of development

HIGHLIGHT

In the U.S. region around Lake St. Clair, the coupling of home rule and the primacy of zoning has resulted in a system of land use “planning” that is characterized by intense competition among local governments to maximize their tax base by encouraging development and sprawling urban development.

can go where, local governments may also use subdivision regulations, which determine how the development will take shape within a given zone (e.g., how a larger piece of land will be divided into smaller units or lots, including lot locations and shapes, street patterns, location of parks and infrastructure needs, such as schools, streets, water and sewer lines, utilities, storm drainage, etc.).

In the U.S. region around Lake St. Clair, the coupling of home rule and the primacy of zoning has resulted in a system of land use “planning” that is characterized by intense competition among local governments to maximize their tax base by encouraging development and sprawling urban development. (See Section II. D. 2. for more on land use trends).

State and federal constitutions enable courts to serve as a higher level of authority for land-use planning, but only to ensure that local governments operate in a legal and constitutional manner, (e.g., appeal against a local decision) not to coordinate policy, although some states have legislation providing for greater planning coordination (see “state roles” below).

Planning Roles and Responsibilities:

Binational

The International Joint Commission (IJC) is a binational body created under the Boundary Waters Treaty of 1909 to prevent and settle disputes between the United States and Canada regarding the use of boundary waters, specifically those relating to water and air pollution and the regulation of water levels and flows. Geographically, this mandate includes the boundary waters themselves as well as their upstream tributaries. The IJC is comprised of six commissioners, three U.S.-appointed and three Canadian-appointed, and is supported by a complex organizational structure of boards and reference groups that deal with the diverse issues in which the IJC is involved. The IJC functions in an advisory capacity to the federal governments of the United States and Canada. The IJC has a single regional office in Windsor, Ontario created solely for overseeing implementation of the U.S.-Canada Great Lakes Water Quality Agreement of 1972 (the Agreement) and its 1987 Protocol, which calls for the U.S. and Canada, as parties to

FACT

The International Joint Commission (IJC) is a binational body created under the Boundary Waters Treaty of 1909 to prevent and settle disputes between the United States and Canada regarding the use of boundary waters. The Great Lakes are a major focus.

the IJC, to “restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem.” The IJC does not have a specific board dedicated to habitat issues, but habitat and biological diversity is-

the IJC, to “restore and maintain the chemical, physical and biological integrity of the waters of the Great Lakes Basin Ecosystem.” The IJC does not have a specific board dedicated to habitat issues, but habitat and biological diversity is-

sues are addressed indirectly through activities focusing on water quality, air quality research and emerging issues and priorities. The 1987 Protocol commits the two governments to develop and implement Remedial Action Plans (RAPs) for 43 Areas of Concern (AOC) within the Great Lakes that have experienced significant degradation.

Three AOCs are within or adjacent to Lake St. Clair: Clinton River, St. Clair River and Detroit River. Each of AOCs has a RAP and a corresponding Public Advisory Committee, which leads efforts to restore the areas beneficial uses that have been impaired. In each of these AOCs, “loss of fish and wildlife habitat” is one of the noted impairments that must be restored in order to remove the area from the list of AOCs. In the Clinton River Area of Concern, loss of fish and wildlife habitat is “mostly attributable to urban and suburban sprawl, and the activities which accompany these phenomena.”

Most AOCs do not have specific criteria or targets for restoring the areas impaired uses. The Clinton River Public Advisory Council is taking steps in this direction. With support from a grant from the Michigan Department of Environmental Quality, the Clinton River Public Advisory Council is working to develop restoration criteria that will be used to determine when the Clinton River has recovered to the point that it can be delisted as an Area of Concern. The guidelines and recommendations in this Lake St. Clair Coastal Habitat Assessment will be useful in this effort. More information about the Clinton River AOC is can be found at www.ijc.org/rel/boards/annex2/tables/clinton.html and at www.epa.gov/glnpo/aoc/clinriv.html

The Detroit and St. Clair Rivers are also AOCs and flanking the Lake itself, directly impact and are impacted by what happens in and around Lake St. Clair. Loss of fish and wildlife habitat is among the beneficial use impairments in these AOCs as well. More information about each of the AOCs is found at www.epa.gov/glnpo/aoc.

The Great Lakes Fishery Commission (GLFC) is another binational entity with responsibilities that affect Lake St. Clair. Like the IJC, the GLFC advises the two federal government, but the GLFC is focused more on fisheries issues. Although it has an aquatic focus, the GLFC might advise the governments on land use activities to the extent that such activities negatively impact fisheries habitat.

GAP

There is no U.S. federal land use policy and there are no explicit U.S. federal land use planning laws other than those that enable states to engage in planning and zoning.



U.S. Federal Land Use Planning

There is no U.S. federal land use policy and there are no explicit U.S. federal land use planning laws other than those that enable states to engage in planning and zoning. However, a number of federal environmental protection laws, as well as programs to fund transportation and other public infrastructure, such as schools, water supply and treatment, can have a direct impact land use planning in coastal areas.

The major federal agencies with a direct interest in coastal habitat conservation and restoration through their management or regulatory responsibilities are described in above in Section II.A.1 and listed in Table II A 1 - 1 on page 15. The federal role is not land use planning, per-se, but their activities directly and indirectly influence planning through regulating and permitting uses, standard-setting, giving financial and technical assistance to states and local governments, as well as directly managing federally-owned lands.

The federal Coastal Zone Management Act and the Endangered Species Act have particular relevance to coastal habitat protection and restoration.

U.S. Regional/Multi-State Land Use Planning

There is no entity with authority to plan for land use on a multi-state or regional level. However, improved coordina-

CASE STUDY

Coastal Zone Management Program

The federal Coastal Zone Management Act of 1972 (CZMA) is the most significant U.S. federal policy affecting land use planning in coastal areas. The CZMA established the national Coastal Zone Management Program. The National Oceanic and Atmospheric Administration, part of the U.S. Department of Commerce, administers the program, which provides financial and technical assistance to coastal states to develop and implement their own coastal zone management programs. Michigan has participated in the federal Coastal Zone Management Program since 1978.

“Federal consistency” provisions of the CZMA require federal actions likely to affect land, water or natural resources in the coastal zone to be consistent with the state’s coastal zone management program. The activities need not occur in the coastal zone to trigger consistency, only to affect coastal resources. Cumulative and secondary effects are also considered.

The CZMA allows each state to define its “coastal zone,” which varies considerably from state to state. With some exceptions, Michigan’s coastal zone includes only that area 1,000 feet landward of the highwater mark. Like the other Great Lakes states, Michigan’s coastal program is “networked,” which means that it does not have its own set of rules and regulations, but rather integrates all relevant existing state policies that impact coastal development, management and protection under the rubric of a single coordinated program.

The CZMA gives states broad flexibility, but requires each state plan to include the protection of significant natural systems such as wetlands and beaches; priority consideration for coastal-dependent uses; and orderly processes for siting energy and other major facilities.

While much of the available funding is issued to fund state programs, about one third is passed on to local communities and non-profits as matching grants for projects that lie within the coastal zone. Funds may be used for a variety of planning activities, including feasibility and natural features studies as well as low-cost construction projects including resource protection, trails, interpretive displays and scenic overlooks.

CZM grants in Michigan have helped protect and restore shoreline habitat, water quality and other nearshore features. Since 1997, the Michigan coastal program has issued more than 45 grants to some 20 plus agencies and local communities in the Lake St. Clair area, totaling approximately \$1.2 million. Most of these projects had some natural area or habitat protection component. One of these is the St. Clair County Community Information System (<http://cis.co.saint-clair.mi.us>), which provides access to a specialized set of data related to development and management of resources along the county’s urbanized shoreline.

In 1990, CZMA reauthorization added a new provision (Section 309) to encourage coastal states to enhance and improve coastal resources. MDEQ undertook a series of assessments of coastal issues, each of which identified the cumulative and secondary im-

tion of state policies and programs related to planning and resource protection is within the purview of the Great Lakes Commission. Established by joint legislative action of the Great Lakes states in 1955 and granted congressional consent in 1968, the Great Lakes Commission is an interstate compact agency that guides, protects, and advances the common interests of the eight Great Lakes states in the areas of regional environmental quality, resource management, transportation, and economic development. The Commission comprises state officials, legislators, and governors’ appointees from Illinois, Indiana, Michigan, Minnesota, Ohio, Pennsylvania, New York, and Wisconsin. Though technically an advisory body, the Great Lakes Commission is the only regional organization with a statutory mandate to represent the collective views of the eight Great Lakes states and carries significant weight as the voice of the Great Lakes states, both within the region and nationally.

State Land Use Planning

There is no state land use or planning agency in Michigan. However, in 2002 the state legislature passed three laws that amended existing state enabling legislation requiring local governments to plan and coordinate their planning activities⁴⁰. These are described under “local planning” below.

Like many other states, Michigan has two primary agencies that address environmental protection and natural resource management. The Department of Natural Resources (DNR) is the lead agency for administering natural resource programs related to habitat conservation and restoration. Importantly, most of the considerable acreage of land owned by the state of Michigan within the project area is managed by the DNR. As such, the DNR is the key state agency in the stewardship of Lake St. Clair coastal habitat. The Department of Environmental Quality (DEQ) is the primary agency responsible for implementing and enforcing environmental protection laws, including the state’s own laws as well as many federal environmental

pacts of coastal development as Michigan’s highest priority. The assessments further found that problems such as coastal habitat fragmentation, loss of agriculture and forest lands, increased imperviousness and stormwater runoff, and increased development in coastal hazard and sensitive areas could be ameliorated through better coordinated coastal land use planning.³⁹

protection laws that are delegated to the state by the USEPA. In Michigan, the coastal management program is administered by the DEQ.

U.S. Local (Municipal) Land Use Planning

There are approximately 201 cities, towns/townships, villages and named unincorporated areas in the project area, including parts of Macomb, St. Clair and Wayne Counties. In southeast Michigan, townships occupy a six square

HIGHLIGHT

The Michigan legislature has passed a series of laws that require townships, cities, villages and counties to coordinate their planning and to provide for open space preservation in their local zoning ordinances.

mile jurisdiction, which may be truncated by cities and villages with their own boundaries, which are usually less geometric. In addition to general purpose governments (cities, townships and villages), each community also has any number of special districts which may have an impact on land use planning—from drain commissioners that regulate the impacts of development on streams to park districts that develop and maintain local parks and many in between. Both special districts and general purpose local governments are faced with different land-use issues based on their size, location, economic base, environmental resources, and demo-

graphic attributes and they respond differently to those problems, using any combination of tools and techniques noted earlier, within the limits imposed by state and federal land-use restrictions. Because Michigan is a “home rule state” all planning decisions ultimately falls to the smallest units of government (city, township or village), which determine how land is used within their jurisdictions--which lots will or will not be developed, when they will be developed, and how.

The 2001 coordinated planning laws passed by the state have several important provisions for local planning:

- all municipal jurisdictions must notify neighboring jurisdictions and other governmental entities of the their intention to amend, revise or create a totally new plan
- the notice must request the recipient’s cooperation in the planning process and ask for the recipient’s comments once a draft plan is created
- the neighboring jurisdictions and the regional planning commission must also send a copy of their comments to the county government within which the proposing municipally resides
- the county then provides comments and a two-part consistency review to a) determine whether the proposed plan is inconsistent with the neighboring jurisdiction’s plan, and b) determine whether the proposed plan is inconsistent with the county’s plan, if such a county plan exists.

FACT

There are approximately 201 cities, towns/townships, villages and named unincorporated areas in the project area, including parts of Macomb, St. Clair and Wayne Counties.

Importantly, Michigan law now requires that every community have a land use master plan. The communities must evaluate their plan every five years to determine its continued relevancy to the community. Plans can incorporate natural features inventories and other ecological concerns. As referenced above, the Coordinated Planning Acts require neighboring local governments to consult and share plans with each other, but do not require them to plan jointly. While the coordinated planning legislation requires local governments

to consult and share plans with each other, they do not require them to develop or implement these plans jointly (with shared goals and objectives), which falls short of planning that is truly coordinated. An analogy might be the difference between telling your neighbor what you’re going to do and doing it on your own versus making a plan and executing it with your neighbor. Importantly, there is no reliable funding source for development/updating of local comprehensive

FACT

Major metropolitan regions in the U.S. are organized into regional councils of governments (COGs). The Southeast Michigan Council of Government (SEMCOG) represents seven counties of the southeast Michigan region. There are no equivalents to COGS in Canada.

plans, which could also be the “carrot” for interjurisdictional planning.

In 2001, the Michigan legislature also passed a series of laws that require all cities, villages, counties, and townships with populations over 1,800 to provide an open space preservation option in their local zoning ordinance.⁴¹

Local governments in all the major metropolitan regions and many rural areas in the U.S. are organized into regional councils of governments or planning commissions. The Southeast Michigan Council of Government (SEMCOG) represents seven counties of the southeast Michigan region (Livingston, Macomb,

Monroe, Oakland, St. Clair, Washtenaw, and Wayne) including the three that directly border Lake St. Clair (Macomb, Wayne and St. Clair). SEMCOG functions in an advisory and coordinating capacity to local governments and is an important repository of socio-economic and environmental data for the region. Much of the U.S. socio-economic data used in this plan was provided by SEMCOG (www.semco.org).

Canadian Planning Framework

Federal Land Use Planning Roles and Responsibilities

Canada is a federation of ten provinces and two northern territories. When it comes to general responsibilities for protecting natural resources and the environment, the institutional framework is somewhat similar to that in the U.S. Although there is general constitutional division of authority between the federal and provincial governments, environmental protection and management is a shared responsibility. Also, like the U.S. the Canadian federal government does not have a specific mandate or function in land use planning, but does have an influence through infrastructure funding programs as well as environmental and natural resource protection programs.

Provincial Land Use Planning Roles and Responsibilities

The provincial government is responsible for most matters that affect the planning and use of land in Ontario, including the management of Ontario public lands and management of the province’s natural resources. The Planning Act of 1990 gave municipal councils the authority to regulate land use⁴². With a few exceptions, authority for most land-use planning decisions has been delegated by the province to one or both levels of municipal government. Lambton County, the Corporation of the Municipality of Chatham-Kent, Essex County and the City of Windsor, are the municipalities responsible for land use planning in the project area.

FACT

The provincial government is responsible for most matters that affect the planning and use of land in Ontario, including the management of Ontario public lands and management of the province’s natural resources.

The Planning Act establishes policies that affect settlement and the management of growth within which municipal planning and development can proceed. The Provincial Policy Statement (PPS) is a complementary policy document to the Planning Act, which sets out the Ontario government’s interest in land use planning and development and provides policy direction on key matters that are deemed to be of provincial interest.

Section 3 of the Planning Act requires all local government bodies that exercise planning authority to “have

regard to” the policies set forth in the PPS. The “have regard to” clause does not require rigid conformity to provincial policies. In practice, it is more of a process that must be followed. As part of a review of the provincial planning system in summer 2004, the province is proposing changing the “have regard to” statement to “be consistent with” which would provide a standard that must be adhered to in reviewing planning documents⁴³. Although environmental interests are expressed as important principles in the Planning Act and the PPS, land-use planning and official plans are more concerned with the developed landscape rather than the natural environment. In Ontario, as in the U.S., land-use planning based on the primacy of natural ecosystems is still some way off, both in principle and reality.

Land uses and the planning and development process are also influenced by a large number of other laws and regulations pertaining to construction standards, environmental standards for infrastructure, protection of natural resources, etc. The agencies that administer these programs are described in Section II. A. 2.

The provincial government may prepare its own plan for any part of the province. Such provincial plans take precedence over the plans of municipalities, which are required to amend their own documents to conform to the provincial plan. Only two such plans have been passed since the legislation was introduced in 1973—the Niagara Escarpment Plan and the Parkway Belt West Plan—the latter which restricts urban development on a corridor around the rapidly growing Greater Toronto Area (GTA).

HIGHLIGHT

The Ontario Municipal Act sets forth the terms and procedures for the province when establishing a municipal government. The Planning Act, in contrast, is the key piece of legislation governing growth and settlement within the Province.

Municipal Land Use Planning Roles and Responsibilities

Seven municipalities have jurisdictions that border Lake St. Clair and the St. Clair River shoreline. (see Section II.A.2). As directed and empowered by the Planning Act, municipalities develop official plans, zoning bylaws and other controls, such as stormwater management plans that lessen the environmental impacts of human activities and community growth.

Ontario’s municipalities are created and guided in their essential operations by the Planning Act. The Municipal Act sets forth the terms and procedures for

the province when establishing a municipal government. The Planning Act, in contrast, is the key piece of legislation governing growth and settlement within the Province. Among major elements, the Act:

- establishes the role and interest of the province in planning matters;
- sets the framework for establishing local planning administration;
- sets the framework for planning instruments and controls that can be employed by local governments, including official plans, zoning, and subdivision control;
- establishes public consultation requirements;
- defines the role of the Ontario Municipal Board with respect to the planning approval process.

The Planning Act enables all municipalities and requires regional municipalities to prepare Official Plans, which establish formal goals, objectives and policies for development and “to manage and direct physical change and the effects on the social, economic and natural environment of the municipality or part of it, or an area that is without municipal organization.” Official plans must be formally adopted by the respective regional or local municipal councils in Ontario before being forwarded to the provincial government for approval. In a few instances the provincial approval authority for lower tier municipalities has been delegated to the regional level of government, where that exists.

In Ontario, a municipal plan is not binding on the province, although any ministry is required to “consult with, and have regard for, the established planning policies of the municipality” before carrying out any activity. Generally, once

HIGHLIGHT

The Ontario Planning Act enables all municipalities and requires regional municipalities to prepare Official Plans, which establish formal goals, objectives and policies for development and “to manage and direct physical change and the effects on the social, economic and natural environment of the municipality or part of it, or an area that is without municipal organization.”

a plan has been finally approved by the Province, no local controls or public works may be carried out that do not conform to the plan.

Once the regional Official Plan has been approved, local municipalities are required to amend their own official plans to bring them into conformity with the regional plan. Municipal councils are required to review their plans at least every five years to ensure that their basic principles and goals are still valid. The Ministry of Municipal Affairs and Housing serves to assist and review the activities of municipalities, including land use planning.

An approved municipal plan has little effect by itself and must be implemented by various regulations (zoning by laws). Implementation takes the form of ensuring that no uses of land are allowed that do not con-

form with approved planning policies, but nothing is legislated to actually seek the achievement of specific planning objectives. Thus the relations to planning and zoning in Ontario is similar to that in the U.S.

Official plans can be and are frequently amended to allow for changes in designated land uses to accommodate growth and other changes that municipal politicians may deem appropriate. In growing municipalities, pressure for amendments from politicians wishing for development growth and from developers can significantly alter the original goals of the official plan for a municipality. Finally, official plans require periodic renewal as mandated by the province.

Zoning

Implementation of planning policies mostly involves the control of privately initiated development and generally take the form of municipal zoning bylaws. Zoning bylaws establish several types of residential, commercial, industrial, and

other zones according to density or character of development. They must be consistent with the municipal official plan and state exactly what uses are permitted in different parts of the community, including where buildings may be located, the types of uses and dwellings permitted, standards for lot size, parking requirements, building height and setback distances from the street.

FACT

In Ontario, zoning bylaws must be consistent with the Official Plan, whereas in Michigan zoning does not have to be consistent with comprehensive plans.

As in the U.S., the Canadian zoning system was developed originally to protect neighborhoods from unde-

sirable uses and although it provides a measure of certainty and predictability, it also has drawbacks as a development control device. In growing municipalities, zoning bylaws tend to be frequently amended simply because zoning is often not flexible or creative enough to regulate new development.

Subdivision control in Ontario has been delegated to most regional municipal governments where they exist. Subdivision control ensures that land is suitable for its proposed use and that it conforms to municipal planning policies. It also serves to protect the community from inappropriate development that may be premature or may put undue strain on community finances or services (e.g., water supply or sewage treatment facilities).

FACT

As in the U.S., the Canadian zoning system was developed originally to protect neighborhoods from undesirable uses and although it provides a measure of certainty and predictability, it has been criticized for permitting sprawling development and unnecessary habitat fragmentation and destruction.

Municipal councils can also create a “committee of adjustment” at the local level to hear cases of minor zoning variances. Similar to zoning boards in the U.S., these committees hear cases where a proposed development or planning activity varies from the zoning by laws. If applicant doesn’t like committee’s decision, it can appeal to Ontario Municipal Board.

The Ontario Municipal Board

The Ontario Municipal Board (OMB) is a quasi-judicial body of last resort and has broad powers to resolve disputes on planning matters. Since it is a court of last appeal and resort, and since it can rule on land use, including overturning council decisions, as well as matters of process, the OMB is a powerful entity in planning

and is regarded as the final planning authority in Ontario. The Planning Act lays out the framework describing who can refer planning matters to the OMB and when they can do so in the planning process. Matters that typically end up before the board can relate to official plans, official plan amendments, zoning, plans of subdivision and even minor variances from zoning provisions. The elevated requirement to “be consistent with” the PPS as discussed above would have particular implications for the Ontario Municipal Board, which would then have a standard for measuring whether a planning provision is in fact consistent with the PPS.

II. D. 2. Land Use Trends

C-CAP data show that 23 percent of the project area or approximately 175,000 acres (70,819 hectares) is “developed” land, including both high intensity and low intensity developed lands. Most of this development occurs in the Michigan portion of the project area, in Detroit and its northern suburbs⁴⁴. Analysis of the C-CAP land cover data for 1995 and 2000 show an net increase of 4,800 acres (1,942.5 hectares) in total high and low intensity development within the project area and a commensurate reduction in all non-developed land categories⁴⁵ (See Section IV. A. 1. & 2.).

HIGHLIGHT

C-CAP data show that 23 percent of the project area or approximately 175,000 acres (70,819 hectares) is “developed” land, including both high intensity and low intensity developed lands. Most of this development occurs in the Michigan portion of the project area, in Detroit and its northern suburbs.

U.S. Land Use Trends

The collective impacts on habitat from socio-economic activities are perhaps most telling through changes in land use. The growth in population, households, employment and income discussed earlier in this section are four fundamental factors driving land use change on the U.S. side of Lake St. Clair. How these socio-economic trends play out on the landscape is significantly influenced by a variety of government policies - primarily those related to local planning and zoning, transportation infrastructure, and sewer and water service. These policies favor low-density, financially segregated residential development and strip commercial development on previously undeveloped lands the outskirts of older communities. Other social and

policy dynamics also influence land use, including federal tax subsidies for mortgage interest and property taxes, school funding and quality, crime, public safety, urban design, private property rights and personal lifestyles. All of these issues and more come together through a U.S. land use policy that is characterized by home rule and the prominence of zoning over comprehensive planning as discussed in the previous section (See Section II. D. 1.).

GAP

There are no comparable or complete data sources on land use and land use trends for the project area. Land cover data for the project area was used as a surrogate and can provide a sense of predominant land uses and trends.



While C-CAP provides land cover data for the project area, there is no land use data specific to the project area. The Southeast Michigan Council of Governments (SEMCOG) tracks land use change for the region's 4,600 square miles and seven counties, using aerial photography and computer mapping every five years. The SEMCOG land use data covers the project area and beyond and provides changes within the counties in the study area and the larger U.S. region. The following discussion of the U.S. side of the study area is based on the SEMCOG land use change monitoring and analysis.⁴⁶

Land Use Change in Southeast Michigan 1990-2000

From 1990 to 2000 the area of land developed in Southeast Michigan increased by 159,300 acres or 17 percent. Of this, 121,000 acres were converted to residential development, representing 26 percent of the new development, while 38,200 acres (24 percent of the new development) were developed for non-residential purposes (e.g., retail stores and surrounding land, industrial facilities, airports, golf courses, etc). Of the 159,300 acres developed, 140,800 were former agricultural lands, resulting in a 13 percent loss in the region's agricultural land. Put another way, conversion of agricultural land to development represented 88 percent of new development during the decade. These figures demonstrate that most new development is a direct result of agricultural land conversion, as relatively little new development occurs on other types of land.

SEMCOG data indicate that from 1990 to 2000 the population increased 5 percent, the number of households increased 9 percent and employment grew by 14 percent, while the amount of land developed increased by 17 percent. The disproportionate rate of new development is attributable to a variety of factors, including population change,

HIGHLIGHT

Conversion of agricultural land to development represented 88 percent of new development in southeast Michigan between 1990 and 2000.



household density shifts (residents per household), household growth (number of houses built), development density shifts, and increases in employment rates and incomes.

Increases in households and incomes affect the rate and type of land development. More households are being built to serve fewer people as children leave home to form their own households and people are living longer and can afford to live in separate households. In

2000, the average household had 2.58 persons compared from 2.66 persons in 1990. The reduction in household size means that more houses are needed to serve the same number of people and more houses require more land.

Increased incomes also affects land development rates and patterns. During the 1990s, after inflation, per capita incomes rose 16 percent. Higher incomes support higher rate of household formation. Again, people who make more money are more likely to be able to afford to live on their own—young adults move away from home earlier and the elderly can afford to stay in their homes. More households and higher incomes resulted in more land to be developed to provide stores restaurants and other businesses to service those homes.

By far the most significant factor affecting the rate of land development is the decrease in the density of new development. SEMCOG estimates that 43 percent of the new development between 1990 and 2000 was due to this factor alone. Between 1990 and 2000 the average density of housing units was 1.25 units per acre compared to 2.84 units per acre from the previous decade. If the 5 percent increase in population were accommodated at the higher density of

the 1980s, the amount of land developed in the 90s would have been only 43,011 acres, and 116,000 acres would have remained undeveloped. Low density development magnifies the impact of actual population, household and income growth. The decrease in development density means that the same number of people occupied over three times as much land area than they would have had development occurred at the rate of the previous decade.

HIGHLIGHT

The decrease in development density means that the same number of people occupied over three times as much land area than they would have had development occurred at the rate of the previous decade.

Lower density development results from a number of factors. Strong preferences for larger homes on larger lots are not only a result of rising income levels, but are reinforced by community master plans, zoning regulations, and building codes that require land use types to be separated, minimum lot sizes and setbacks much greater than were required in traditional neighborhoods build prior to World War II. One only needs to look at older neighborhoods compared to newer neighborhoods to see the difference in land consumption. Older neighborhoods were built on narrower streets and narrower lots, with houses closer to each

other, closer to sidewalks and generally had smaller rooms and smaller garages behind the homes. They also required fewer roads and boulevards because a variety of shops were usually with close proximity.

Other factors such as transportation access, locations of available land and private property rights can facilitate or deter development, but are not primarily responsible for the amount of land development.

Urban expansion has resulted in significant loss of agricultural lands. SEMCOG data indicate that between 1990 and 2000, the three counties bordering Lake St. Clair lost 63,900 acres (25,859 hectares) of agricultural land--a 15.4 percent loss. While some losses are due to economic factors in farming, the agricultural land losses are primarily due to land development.

HIGHLIGHT

The pattern of scattered, low-density development in outlying areas, commonly known as “sprawl” results in excessive fragmentation of remaining open space and natural habitat areas.

The fundamental implication for habitat is that once open space and agricultural lands are developed, those lands are no longer available for conservation or restoration. The pattern of scattered, low-density development in outlying areas, commonly known as “sprawl” results in fragmentation of the remaining open space and natural habitat areas—a pattern that is likely to continue into the foreseeable future. This heightens the urgency to conserve existing habitats around Lake St. Clair.

Canadian Land Use Trends

On the Canadian side of the project area, an exception has been urban expansion in and around Windsor. As Ontario’s and indeed Canada’s southernmost point with a relatively long (by Canadian standards) growing season, the land around Lake St. Clair is among Canada’s prime farmland. From this geographic standpoint, it is easy to see why Ontario has been prudent about keeping the its prime agricultural land in agricultural use.

Western Ontario is changing in ways that are transforming the local economy, communities, and landscape of this area of the province. Western Ontario is the province’s agricultural heartland and generates more than half of Ontario’s gross farm revenue. Lands converted to agriculture during the 1800s have largely remained in agriculture as farming remains the mainstay of the region (75 percent is in farmland). Culturally, agriculture is still the center of many communities⁴⁷. Future land use trends show the number of farmers decreasing, while agricultural production intensity and

the number of non-farming residents in rural areas will increase. More traditional small family farms are becoming large modern operations with integrated production and distribution systems serving world markets. Lake St. Clair coastal wetlands were drained for settlement and agriculture between 1873 and 1968. By the mid 1960s nearly 40 per-

HIGHLIGHT

Western Ontario is the province's agricultural heartland and generates more than half of Ontario's gross farm revenue. Lands converted to agriculture during the 1800s have largely remained in agriculture as farming remains the mainstay of the region.

cent of wetlands directly associated with the lake had been destroyed. Most were drained for agriculture⁴⁸. Today, urban centers such as Windsor anticipate future expansion due to population and job growth as the automotive sector, petrochemicals, financial services, tourism and other industries are play an increasingly important role in the area's economy.⁴⁹

Windsor-Essex County

Local planning responsibilities and related land use trend data in the three Canadian counties that boarder Lake St Clair (Essex, Chatham-Kent, and Lambton) are divided between local county and municipal govern-

ment units and vary between counties. Of the three counties, Essex County has the highest population with a greater amount of urbanization and development adjacent to the Lake St. Clair. Essex is expected to have the largest population growth rate through 2028 at 19 percent, with Chatham-Kent and Lambton at 2 percent each.⁵⁰

Ninety percent of Essex County is classified as Prime Agricultural Land (Class 1, 2 and 3 Soils, in the Canada Land Inventory)⁵¹. Windsor-Essex is known for its productive agricultural industry. Currently 92 percent of the land in the county is in agricultural use with 5 percent in urban infrastructure (roads and towns) and 3 percent remaining as natural lands⁵². The agricultural landscape is changing to one with fewer, larger farms. The consolidation of farms into

larger operations resulted in a 32 percent decrease in the number of farms between 1986 and 2001. During the same period, Essex County experienced a 25 percent increase in farms greater than 400 acres in size.⁵³

FACT

Essex County has the highest population with a greater amount of urbanization and development adjacent to the Lake St. Clair.

Scattered rural development has been a trend in less-developed areas presenting a variety of environmental problems. For example, groundwater contamination may occur when private septic systems fail or become overloaded in rural areas not serviced by public water

supplies. Scattered rural development could be curtailed in favor of existing settlement areas, to preserve prime agricultural land and reduce the reliance on private sewage disposal systems. The County Plan has designated "settlement areas" along Lake St. Clair where growth will be encouraged in areas with full municipal service⁵⁴.

Commercial and industrial land is in short supply in the county. Essex County estimates that the existing 1,730 acres (700 hectares) of land designated for industrial land as of 2001 are insufficient for the County's needs over the next 20 years. It is estimated that an additional 300 to 400 hectares of land will be required for this purpose⁵⁵. The City of Windsor projects that it will require an additional 243 to 514 ha of land over the next 20 years for industrial development. This is excluding the 200 to 400 hectares currently reserved for prospective large-scale industries in the municipality⁵⁶. Recent provincial initiatives, including the introduction of "brownfield" legislation, may encourage the rehabilitation of former industrial or commercial sites, reducing the need for new development at the periphery of settlement areas.

Essex County has lost approximately 97 percent of its original wetland area and approximately 95 percent of its original forest cover⁵⁷. The Essex Region Conservation Authority's Biodiversity Conservation Strategy has noted that de-

spite extensive clearing and settlement, Windsor-Essex remains Canada's most biologically diverse region. Windsor-Essex is located at the northern limit of the Eastern deciduous forest region and contains more rare and endangered

FACT

Windsor-Essex is located at the northern limit of the Eastern deciduous forest region and contains more rare and endangered species of plants and animals than any other part of Canada, including over 500 species of rare or endangered plants and animals.

species of plants and animals than any other part of Canada, including over 500 species of rare or endangered plants and animals. However, further rural development threatens some of the natural features that make Windsor-Essex unique⁵⁸. The Essex Biodiversity Conservation Strategy is a long-term plan which will encourage protection and rehabilitation of natural areas within the county⁵⁹.

jections call for an estimated 96,000 dwelling units for the 1996-2016 planning period. Approximately 71 percent of all required units are projected to be low density, 17 percent medium density and 12 percent high density⁶⁰. The amount of land that will be consumed is not known, but could be estimated based on the types (i.e., density) of development expected to occur if that data were available.

In 1996 projections called for an additional 10,950 dwelling units in by 2016. Building rates exceeded these projections. To date, 75 percent of the projected need for the twenty-year planning period has been built. Accordingly, projections were modified and the new pro-

Beginning in the late 1990s, industrial land serviced with roads, water and utilities in the Windsor/Essex region had become scarce. As a result of the projected positive population, housing and employment growth, the City of Windsor's land supply was expected to decrease over the next twenty years. In May of 2002, the County of Essex, Town of Tecumseh and City of Windsor recognized the need for a cooperative solution and negotiated a boundary adjustment. The City of Windsor currently covers approximately 145.3 square kilometers including a 2003 transfer of lands from Tecumseh of 2,532 hectares. It is anticipated that the recent land transfer from the Town of Tecumseh will accommodate land supply needs for both employment and residential land use in the coming years⁶¹.

Lambton County

The Official Plan for the County of Lambton estimates that county population will increase to 142,000 by the year 2016 with an increase in the total labor force to 73,000 by 2016. It is anticipated that all municipalities within the county

HIGHLIGHT

Petrochemical industrial land along the main highway running parallel to the St. Clair River will be centered in the western Lambton County area, with new development set back from the river.

will experience some growth based on the availability of sewer, water and community services. The majority of growth is expected to occur in the western Lambton County area, which is comprised of the City of Sarnia, the Village of Point Edward, and the Townships of Moore and Sombra⁶². This area of the County is where the major employers are located along with the greatest concentrations of industrial and commercial activities. Petrochemical industrial land along the main highway running parallel to the St. Clair River will be centered in the western Lambton County area, with new development set back from the river. Rural areas in the

county are anticipated to experience the lowest levels of growth. The plan also anticipates the need on average for 400 new dwelling units annually per year to the year 2016. Over half of the counties' total new population growth and additional housing unit needs will occur in western Lambton County.

The majority of growth within the county will be directed to current Urban Centers and Urban Settlements. The northwest part of the county has the greatest service area and the greatest number of urban uses and employment op-

portunities. Rural and agricultural land use will continue as the major land use in the county. Only a limited amount of development is anticipated in the county rural areas.⁶³

Chatham-Kent

Of the three counties in Ontario on Lake St. Clair, Chatham-Kent is the smallest in population and is expected to have the least amount of future growth. The Ontario Ministry of Finance estimates that at a medium growth rate that Chatham-Kent would grow by 3,500 persons to 116,300 over the twenty year period from 2001 - 2021. Under their high growth scenario Chatham-Kent would grow by 7,200 persons to 120,000⁶⁴. Based on the medium growth scenario, the demand for housing in Chatham-Kent over the next twenty years (2001-2021) is projected to be for about 6000 dwelling units of which 80 percent will be low density housing (single detached and semi-detached dwellings), 17 percent medium density housing (street and stacked townhouses, low rise apartments) and 3 percent high density housing (high rise apartments)⁶⁵. It is not known exactly how much land this development is expected to consume.

It is expected that Chatham-Kent will maintain its basic rural character for the near future. The stated goal or objective of the Official Plan is to have the Urban Areas as focal points where residential, commercial and industrial development will be directed in the County. Some in-filling, additions and rounding out of existing municipalities and serviced hamlets will also occur. In privately serviced Rural Settlement Areas development will be limited to in-filling. It is intended that the majority of population growth will be accommodated within the county's seven Urban Centers.

Due to its proximity to Highway 401 and other major urban centers in Ontario and the United States, Chatham-Kent has developed a strong industrial land base. The municipality contains eleven industrial areas which are located either within or adjacent to its seven Urban Centers. The Chatham-Kent Employment Land Needs Analysis (technical study prepared in support of the Economic Development Strategy) found that while there is a sufficient supply of designated industrial land in Chatham-Kent to meet the projected 20 year demand, portions of those lands remain undeveloped because they do not meet the needs of the current industrial land market.

The Employment Land Needs Analysis indicated that while demand for industrial lands has been relatively weak throughout most areas of Chatham-Kent, those municipalities with industrial areas/business parks located in the corridors of 400 Series highways have experienced strong demand for employment lands in those areas. The Study indicated that over the twenty year (2001-2021) time horizon up to 131.5 hectares (325 acres) of designated employment

land would be warranted in the Highway 401 Corridor at Bloomfield Road and Highway 40/Communications Road in addition to the lands available in the 401 South and 401 North Industrial Areas in Tilbury.⁶⁶

FACT

The Municipality of Chatham-Kent encompasses a diverse range of parks, natural areas and recreation facilities, enhanced by the water-based recreation opportunities offered by the extensive shorelines on Lake Erie and Lake St. Clair, and the Thames and Sydenham River.

The Municipality of Chatham-Kent encompasses a diverse range of parks, natural areas and recreation facilities, enhanced by the water-based recreation opportunities offered by the extensive shorelines on Lake Erie and Lake St. Clair, and the Thames and Sydenham River. The County has 11,500 hectares of "provincially significant" wetland areas along Lake St. Clair. This includes the St. Clair National Wilderness Area, a globally important bird area. In pre-settlement times, it is estimated that over 60 percent of Chatham-Kent's

landscape was wetland, 16 percent was forest and approximately 12 percent was tall-grass prairie. Agriculture in the region has reduced both wetlands and forest cover in Chatham-Kent to less than 4 percent each. Forest cover in Chatham-Kent is extremely low and is significantly less than pre-settlement levels and well below the Environment Canada Draft Framework Guideline of 30 percent. A strategy to protect natural areas is particularly important because of the fragmented nature of the natural features.⁶⁷

Section II Endnotes

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17. A riding is a constituency or electoral district in Canadian parliamentary politics.
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19. Population and household numbers in this section are derived from studies and reports produced by the Southeast Michigan Council Of Governments (SEMCOG). The Southeast Michigan region includes the cities, villages, townships, and counties, within the seven county area of Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties.
20. SEMCOG. Population and Households in Southeast Michigan, 1990-2000. Southeast Michigan Council of Governments, July 2000.
21. SEMCOG, Population and Households in Southeast Michigan 1990-2001, December 2001.
22. The 2004 population and household data are based on SEMCOG estimates.
23. SEMCOG, Population and Household Estimates for Southeast Michigan, May 2004.
24. SEMCOG, 2030 Regional Development Forecast for Southeast Michigan: Population, Households, and Jobs for Cities, Villages, and Townships 1990-2030. October 2001.
25. Office of Planning, New Official Plan Draft, September, 2003, Municipality of Chatham-Kent, Chatham, Ontario.
26. City of Windsor, Planning Division, Windsor, Ontario Canada, October, 2002.
27. Ontario Ministry of Finance Projections 1999-2028, Toronto, Ontario, Canada 2000.
28. Ontario Ministry of Finance, Windsor-Essex: In Profile, Provincial Planning and Environmental Services Branch, Ministry of Municipal Affairs and Housing, 2003. Web site: www.mah.gov.on.ca/userfiles/HTML/nts_1_12605_1.html
29. Figures provided by the Sarnia Vessel Traffic Service, which monitors all traffic for Canada and the US transiting the Detroit and St. Clair Rivers.

30. *Environmental Sensitivity Data for the St. Clair River, Lake St. Clair and Detroit River Shorelines*. Environment Canada, Environmental Protection Branch Ontario Region, Downsview, Ontario, 1994, 79 pages.
31. Southeast Michigan includes the counties of St. Clair, Macomb, Oakland, Livingston, Washtenaw, Wayne, and Monroe. Lapeer and Sanilac Counties are added here for informational purposes but are not included in the employment statistics provided in Table IIA3-1. County profiles accessed at <http://medc.michigan.org/miinfo/places>
32. *A Decade of Prosperity in Southeast Michigan: Comparing 1990 and 2000 Census Data*, Southeast Michigan Council of Governments, Detroit, Michigan, 2002.
33. *Ibid.*
34. Southwest Ontario includes the Counties of Oxford, Elgin, Middlesex, Lambton, Essex, Perth, Huron, Bruce, Grey and the Chatham-Kent Division.
35. City of Windsor, Planning Department, Office of the City Planner, Official Plan, 2004. Web Site: www.citywindsor.ca/000423.asp
36. Ontario Economic Outlook and Fiscal Review, Canadian Ministry of Finance, Toronto, Ontario, 2002.
37. *Ibid.*
38. "Primary Industries" includes Agriculture, however, the referring document does not individually break out figures for Farming, Forestry, or Fishing in its tables.
39. Coastal Management Program Section 309 Enhancement Grants Assessment/Strategy, Michigan Department of Environmental Quality, Lansing, Michigan, 2001.
40. Michigan Public Acts 263 (amending Township Planning Act 168 of 1959), 264 (amending Municipal Planning Act 285 of 1931) and 265 (amending County Planning Act of 1945) of 2001 became effective in January 2002.
41. Michigan Public Acts 177,178,and179 of 2001.
42. Revised Statutes of Ontario, Chapter P 13) 1990--RSO c.p.13. www.e-laws.gov.on.ca
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